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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/876,982

06/08/2001

Lothar Wenzel

5150-57000

9957

7590

06/16/2004

Jeffrey C. Hood
Conley, Rose, & Tayon, P.C.
P.O. Box 398
Austin, TX 78767

EXAMINER

CHAWAN, SHEELA C

ART UNIT

PAPER NUMBER

2625

DATE MAILED: 06/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/876,982

Applicant(s)

WENZEL ET AL.

Examiner

Sheela C Chawan

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2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2001.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1,2,4-7,11-14,16-19,21,22,24-26,28,30,31 and 34 is/are rejected.
7) ☒ Claim(s) 3,8-10,15,20,23,27,29,32,33 and 35 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 08 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The Examiner has approved drawings filed on 6/8/01.

Claim Rejections - 35 U.S.C. § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 11-14, 21, 22, 30 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Stewart et al. (US. 5,903,458).

As to claim 1, Stewart discloses a method for generating a curve on a surface, comprising:

selecting a parameterization of the surface (column 4, lines 34- 48), wherein the parameterization corresponds to a parameter space (abstract, column 4, lines 37-42);

selecting a first curve in the parameter, space (column 9, lines 42- 49);

determining a re-parameterization (column 2, lines 64-67, column 3, lines 45- 55) of the surface based on a metric of the surface (column 3, lines 1-18, column 4, lines 49- 58); and

mapping (column 4, lines 34- 65) the first curve in the parameter space onto the surface based on the re-parameterization (column 2, lines 64- 67, column 3, lines 1-18), to generate the curve (note mapping the DMS boundary curve from the super-mesh

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space back onto the surfaces patches to form output data, column 9, lines 30- 67, column 10, line 65 through column 11, lines 1-7);

wherein the curve is useable in analyzing the surface (column 9, lines 30- 67, column 5, lines 1-64, column 11, lines 11- 65).

As to claim 11, see the rejection of claim 1.

As to claim 21, see the rejection of claim 1.

As to claim 30, claim 30 recites similar limitation as claim 1 above and similarly analyzed except for the step as taught by Stewart a CPU (fig 16, item 10); and a memory medium which is operable to store one or more software programs (fig 16, item 14); wherein said CPU is operable to execute said one or more software programs (column 2, lines 21-67, column 12, lines 24-36).

As to claims 2, 12, 22, Stewart discloses the method further comprising:

generating output comprising the generated curve on the surface (column 5, lines 1-64, column 9, lines 30- 67, column 11, lines 11- 65).

As to claim 13, Stewart the method further comprising:

analyzing the object using the curve (column 9, lines 30- 67, column 5, lines 1- 64, column 11, lines 11- 65).

As to claim 14, Stewart discloses the method further comprising: determining a property of the object using the curve (column 9, lines 31-67).

As to claim 31, Stewart discloses the system wherein the CPU (fig 16, item 10), is further operable to execute said one or more software programs to perform

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generating output comprising curve on the surface (column 2, lines 21-67, column 12, lines 24-36).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(a) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 4, 16 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart et al. (US. 5,903,458), as applied to claims 1-2, 11-14,21,22, 30 and 31 above, and further in view of Ge et al. (US 6,124,858).

Regarding claims 4 and 16, Stewart discloses a system and method for forming geometric features using global reparametrization. Stewart is silent about specific details of parameter space comprises a 2D rectangle.

Ge discloses a method of mapping a two-dimensional raster based image onto surface of a three-dimensional vector based image model. The system comprises of:

The method wherein the parameter space comprises a 2D rectangle (column 4, lines 10- 41). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Stewart to include a parameter space comprising a 2D rectangle. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Stewart by the teaching of Ge in order to allow precise placement of 2-D raster images on the 3-D surface and provide a three-dimensional rendering method that is compatible with existing computer display and printing equipment, (as suggested by Ge at column 3, lines 3-15).

As to claim 28, Ge discloses the memory medium wherein the surface comprises a surface of an object (abstract, column 3, lines 50- 65);

wherein the curve comprises a scan path useable to scan the object (column 2, lines 12- 67, column 4, lines 27- 67);

wherein the program instructions are further executable to perform (column 6, lines 36- 56).

4. Claims 5 -7, 17-19, 24-26 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart et al. (US. 5,903,458), in view of Ge et al. (US 6,124,858), as

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applied to the claims 1-2, 4, 11-14, 16, 21,22, 28, 30 and 31, above and further in view of Simpson (US 5, 268,998).

Regarding claims 5, 17 and 24, Stewart discloses a system and method for forming geometric features using global reparametrization. Stewart is silent about specific details of the parameter space comprises one of a unit square, a unit cube, or a unit hyper-cube.

Simpson discloses a direct visualization of objects lying in alternative geometries, and /or for portraying the motions of objects in the space of those alternative geometries. The system comprises of:

the parameter space comprises one of a unit square, a unit cube, or a unit hyper-cube (column 7, lines 14- 46). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Stewart to include the parameter space comprises one of a unit square, a unit cube, or a unit hyper-cube. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Stewart by the teaching of Simpson in order to provide a system for the direct visualization of objects lying in alternative geometries, and /or for portraying the motions of objects in the space of those alternative geometries, (as suggested by Simpson at column 3, lines 48- 54).

As to claims 6, 18 and 25, Simpson discloses the method wherein the parameter space comprises a unit n -dimensional cube, wherein the dimensionality n is greater than 4 (column 2, line 50 through column 3, line 1- 20).

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As to claims 7, 19, 26 and 34, Simpson discloses the method wherein the metric of the surface is a Riemannian metric (column 41, lines 34- 48).

Allowable Subject Matter

5. Claims 3, 8 -10, 15, 20, 23, 27, 29, 32, 33 and 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Other prior art cited

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Krishnamurthy (US.6,271,856 B1) discloses creating and modifying parameterizations of surfaces.

Yamada et al. (US.6,192,293 B1) discloses system for meshing curved surface by generating and controlling the number of bubbles in parametric space.

Ellson et al. (US.5,805,783) discloses method and apparatus for creating storing and producing three-dimensional font characters and performing three-dimensional typesetting.

Zwicker et al. (US.6,639,597B1) discloses visibility splatting and image reconstruction for surface elements .

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela C Chawan whose telephone number is 703-305- 4876. The examiner can normally be reached on Monday - Thursday 6 - 7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 703-308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SCC
Sheela Chawan
Patent Examiner
Group Art Unit 2625
June 3, 2004



BHAVESH M. MEHTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600